TRAINING AND CHECKING STALLS

Certificate holders have typically taught stalls as a discipline that requires more effort for the pilot to set up than is needed for the recovery. In simulators, despite the fact that there is guidance suggesting that stalls be practiced in the realistic environment, most operators require their pilots to jump through the same hoops they might in the airplane.

We say that our main concern is recognition and recovery from stalls, but most operators belie that by their stall procedures. I have found that there are relatively simple ways to set up stalls so that the pilot's challenge is realistic: the pilot should recognize the impending stall and recover with a minimum loss of altitude. This, after all, is what one hopes for in the case of an inadvertent stall.

In simulators we routinely do V_1 cuts at V_1 on the runway, but we enter the departure stall at 5,000' AGL! I have found the pilots find a realistic challenge when I have them pitch 5° higher than normal, reduce the power to a value that will cause the stall, and start a turn about 200' AGL. The pilot must reduce the angle of attack (both pitch and bank) and add max power. Doing this with little or no loss of altitude is a challenge that makes sense, particularly when the pilot can continue the climb as planned. (The discipline of maintaining an altitude throughout the stall is irrelevant to our stated purpose.)

A similarly useful stall can be done in the airplane at a safe altitude. I organize a block altitude with ATC, and initiate the stall near the bottom of the block. With the aircraft configured for initial climb, I make the same adjustments listed above, the pilot makes the recovery, and continues the climb as assigned.

Clean stalls are most likely to occur with an autopilot on: therefore, I organize them accordingly. These are the most interesting events, because they seem the most probable stalls that pilots may encounter. In previous practice, the stall was hand flown, and many operators even briefed that they would stop trimming at a particular speed. Autopilots do not stop trimming: therefore, pilots are confronted with entirely different control forces with an autopilot stall. After a stepdown during cruise, a clean stall may follow inattention to the power setting. A V_s climb with inadequate attention to the rate vs. power may also result in a clean stall. Either procedure is easy to set up in the simulator or the airplane, and pilots find them very revealing and useful exercises.

The approach to landing stall can be done on the autopilot on an ILS in the simulator, or it can be done as a visual event with the VASI giving vertical guidance. The instructor/check airman simply sets a low power setting, while the pilot (or autopilot) holds the glideslope. Once again, instead of the pilot worrying about a discipline for the setup, he is challenged with a go around from an impending stall. The goal is to recover with little or no loss of altitude, followed by a climb to the assigned altitude. In an airplane, the setup involves using a relatively low V_s descent at reduced power in the landing configuration. (This exercise begins at the top of a block altitude.) The visual example can be done in a turn (simulating base-to-final) or straight ahead.

These procedures have been in use for several months where I do 121.441 checks. Every pilot has been pleased to do the realistic exercises. Without exception, the pilots have said how much they learned that they will take back to the field. They all had found nothing useful in the contrived setups at specific altitudes that they had practiced in the past.

As a checking event, the recognition and recovery from a realistic event demonstrates a pilot's ability that is of much more concern to this examiner than a performance that might be compared to water ballet, something that requires a great deal of skill, but it does not get you across the pool.